

|                               |                        |                     |  |
|-------------------------------|------------------------|---------------------|--|
| <b>Notice of Allowability</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                               | 09/459,574             | SASAKI, GEN         |  |
|                               | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                               | Nhan T. Tran           | 2622                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 5/9/2006 & phone interview on 5/18/2006.
2. ☒ The allowed claim(s) is/are 2-4, 12-14 and 18-29.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input checked="" type="checkbox"/> Other <u>See Continuation Sheet</u>.</li> </ol> |
|---|--|

Continuation of Attachment(s) 9. Other: attached is a draft amendment sent from Zachary Stern on 5/18/2006 to authorize the Examiner to make Examiner's amendment to claims 12, 14, 18-23, 26 & 27.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, filed 5/9/2006, with respect to claims 1 (now rewritten into claim 2) & 4 have been fully considered and are persuasive. The rejection of these claims has been withdrawn.

### EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with **Zachary Stern** on 5/18/2006.

The following claims have been amended or canceled:

**Claims 7-11 and 15-17 have been canceled.**

**Claims 12, 14, 18, 22, 23, 26 and 27 have been amended to depend from claim 28.**

**Claim 14** has been also amended as:

The image processing circuit according to claim [[1]] 28 wherein,  
said real time processing unit further comprises an auto focus evaluation block from which a high-frequency component evaluation value is outputted as an evaluation

Art Unit: 2622

value used in an appropriate evaluation for auto focusing, said evaluation value being obtained by integration of the absolute value of a difference in a plurality of adjacent pixels having a predetermined identical component, with respect to a given region in a pixel array of image, said auto focus evaluation block comprising:

a timing selector capable of selectively changing a clearance timing between a pair of pixels which are identical in component and objects for obtaining a difference;

an arithmetic circuit for calculating the absolute value of a difference between a pair of pixels which are identical in component and spaced at a clearance timing selected by said timing selector; and

a cumulative adder in which cumulative addition of absolute values sequentially outputted from said arithmetic circuit is performed a given number of times.

**Claim 19** has been also amended as:

The image processing circuit according to claim 12 wherein said real time processing unit comprises:

a signal pixel selector that selects a high-frequency component signal of green component obtained on said pixel reference block in said color selection block, and the fourth color pixel stored in said main memory;

a feature data look-up table in which data selected by said signal pixel selector is inputted as a feature data, for numerical transformation with a predetermined function, and the result is outputted; and

a multiplier in which each component of a pixel data of a predetermined pixel array is multiplied by a value outputted from said feature data look-up table.

**Claim 20** has been also amended as:

The image processing circuit according to claim 12 wherein said real time processing unit comprises:

a pixel selector that selects the fourth color pixel of each pixel that is stored in said pixel reference block in said color selection block, alternatively, provided from said image pickup device, and a pixel of one component in said three-color system pixel employed as a fourth color pixel of a  $2 \times 2$  pixel array when handling said three-color system pixel array;

a feature data look-up table in which a pixel selected by said pixel selector is inputted as a feature data, for numerical transformation by a predetermined function, and the result is outputted; and

a multiplier in which each component of a pixel data of a predetermined pixel array is multiplied by a value outputted from said feature data look-up table.

**Claim 21** has been also amended as:

The image processing circuit according to claim 12 wherein said real time processing unit comprises:

a color space transformation circuit on which a first array system pixel data having a predetermined color component array is transformed to a second array system pixel data having a predetermined special color component; and

a switching selector performing switching as to whether the fourth color pixel data outputted from said color selection block, or data of one component in said first array system pixel data is allowed to be inputted to said color space transformation circuit, characterized in that:

said color space transformation circuit having a function of, when said switching selector allows data to be inputted to said color space transformation circuit, transforming said data thus allowed to said second array system pixel data, as a fourth color pixel data.

### ***Election/Restrictions***

3. Claim 28 is generic and allowable (claim 28 is a rewritten claim to include original claims 1 & 2). Accordingly, the restriction requirement as to the encompassed species is hereby withdrawn and claims 12-14 & 18-27, directed to the species of II, III, IV and V <sup>are</sup> no longer withdrawn from consideration since all of the claims to these species depend from or otherwise include each of the limitations of an allowed generic claim.

In view of the above noted withdrawal of the restriction requirement as to the linked species, applicant(s) are advised that if any claim(s) depending from or including all the limitations of the allowable generic linking claim(s) be presented in a continuation or divisional application, such claims may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no

longer applicable. See *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

***Allowable Subject Matter***

4. Claims 2-4, 12-14, 18-29 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding independent claims 2 & 28, the prior art of record fails to teach or fairly suggest the combination of all limitations required in each of claims 2 & 28 that includes the limitations of *said real time processing unit includes a plurality of image processing blocks connected sequentially, a foremost stage image processing block is configured to selectively receive the pixel data of image temporarily stored in said main memory through said selector, at least one of a second and later image processing blocks is configured to selectively receive at least one of pixel data from said foremost stage image processing block and the pixel data of image temporarily stored in said main memory through the selector, a rearmost output stage image processing block configured to output a rearmost processed pixel data to said main memory, and at least one other output stage image processing block preceding said the rearmost output stage image processing block, said at least one other output stage image processing block being configured to output preceding processed pixel data to both a succeeding image processing block and said main memory.*

Regarding independent claims 3 & 29, the prior art of record also fails to teach or fairly suggest the combination of all limitations required in each of claims 3 & 29 that includes the limitations of *a timing generator configured to regulate operation timing of*

*said real time processing unit and said image pickup device, said timing generator comprising: a synchronous controller configured to synchronously regulate operation timing of said real time processing unit and operation timing of said image pickup device when said selector selects the pixel data in the image photographed by said image pickup device, and an asynchronous controller configured to asynchronously regulate operation timing of said real time processing unit and operation timing of said image pickup device when said selector selects the pixel data stored in said main memory.*

Regarding claims 4, 12-14 & 18-27, these claims are allowed as being directly or indirectly dependent from claim 28 (see Examiner's amendment).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-7371. The examiner can normally be reached on Monday - Thursday, 7:30am - 5:30pm.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NT.

A handwritten signature in black ink, appearing to read 'David Ometz', with a long horizontal flourish extending to the right.

DAVID OMETZ  
SUPERVISORY PATENT EXAMINER